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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/606,525 | 06/26/2003 | Kenneth A. Peterson | SD-7139.1 | 5731 |
| 20567 | 7590 | 09/17/2004 | EXAMINER | |
| SANDIA CORPORATION | | | HU, SHOUXIANG | |
| P O BOX 5800 | | | ART UNIT | |
| MS-0161 | | | PAPER NUMBER | |
| ALBUQUERQUE, NM 87185-0161 | | | 2811 | |

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,525

Applicant(s)

PETERSON, KENNETH A.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 13, 14, 17-20 and 22-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12, 15, 16 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>20040626</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 13, 17 and 22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 20, 2004.

Applicant's election with traverse of Species #3 in the above reply is acknowledged. The traversal is on the ground(s) that Claim 6 is generic. This is not found persuasive because Species 1-10 as identified in the previous Office action are distinctive from each other. Regardless whether Claim 6 is generic to them; and, applicant's arguments fail to adequately explain whether and/or why they are indistinctive from each other. Nevertheless, it is noted that, upon the allowance of Claim 6, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of Claim 6. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a). Thus, the requirement is still deemed proper.

In addition, claims 14 and 18-20 are also withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being unreadable on the elected species. The subject matters regarding "a transparent window disposed across the aperture" as recited in claim 14, and "an electrically conductive overcoat" as recited in Claims 18-20 are unreadable on the elected species of Figs. 4a-4f.

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Accordingly, claims 1-47 are pending in this application; and claims 6-12, 15, 16 and 21 remain active in this Office action.

Claim Objections

2. Claims 6-12, 15, 16 and 21 are objected to because of the following informalities and/or defects:

In claim 6, the term of "interconnection made" should read as: --interconnection formed--.

In claim 6, the term of "; but not" should read as: --, but not--.

In claim 8, the terms of "ceramic DIP" and "CERDIP" should be as read as one term: ceramic dual inline packaging (or, CERDIP).

In claims 9-11, the term of "further comprising" should read as: --comprising--, as at least one active element has to be comprised in the recited device.

Claim 15 recites the subject matters of multiple coatings from the listed materials, which are not fully supported for the elected species in the specification.

Claim 21 recites the term of "bulk encapsulant", but fails to clarify how is defined, as according to the specification, the coating in the instant invention can be as thick as about 100 though 500 microns (see the bottom paragraph in page 13), which is thick enough to be regarded as a bulk coating.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 11 recites the subject matters that the recited device comprises an unreleased MEMS. However, the claimed invention is directed to a device, and it is not clear how such a device is workable if the MEMS therein has not been released yet.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6-12, 15 and 21, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn (US 6,455,927).

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Glenn discloses a microelectronic device (Fig. 11), comprising: an electrically insulating substrate (1102; ceramic); a first electrical conductor (1104); a microelectronic device (112) attached to the substrate, wherein the device comprises an active area (114; including multiple micromirrors or MEMS) and a passive area (including 116); a second electrical conductor (116) disposed on the device and located within the passive area; an electrical interconnection (1106; a bonding wire); and, an electrically insulating, protective coating (1118) covering the first and second electrical conductors, the electrical interconnection, and the passive area; but not covering the active area.

Regarding claim 8, the active area in Glenn comprises integrated micromirrors, which naturally includes integrated circuits. Thus the package structure in Glenn is naturally readable as a dual inline packaging structure.

Regarding claim 10 and 11, the MEMS or micromirrors in the device of Glenn are naturally released. Otherwise, the device would not be workable.

Regarding claim 15, it is noted that the limitation of "vapor-deposited coating" or "chemical vapor deposited coating", among others, are each process limitations. And, these process limitations would not carry patentable weight in the claim drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 21, as being best understood in view of claim objections above, it is noted that layer 1118 in Glenn can be regarded as a non-bulk encapsulant as it does not encapsulate the active area and the bottom side of the device.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 16, as being best understood in view of the claim objections above, is rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn in view of Applicant's Admitted Prior Art ("AAPA").

The disclosure of Glenn is discussed as applied to claims 6-12, 15 and 21 above.

Although Glenn does not expressly disclose that the coating material can also be formed of Parylene, one of ordinary skill in the art would readily recognize that Parylene is art-known packaging material for better protecting the device, as evidenced in AAPA (see the third paragraph on Page 4 of the instant specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Parylene coating material of AAPA into the device of Glenn, so that a MEMS device with better protection would be obtained.

Conclusion

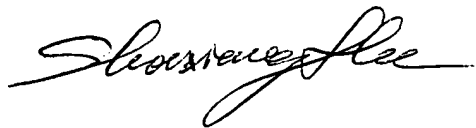
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
September 15, 2004

A handwritten signature in black ink, appearing to read 'Shouxiang Hu', written in a cursive style.

**SHOUXIANG HU
PRIMARY EXAMINER**